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10/660,449	09/11/2003	Warren E. Cory	X-1214 US	4907
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XILINX, INC				
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SAN JOSE, CA 95124				
EXAMINER				
NGUYEN, TANH Q				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/660,449

Applicant(s)

CORY ET AL.

Examiner

TANH Q. NGUYEN

Art Unit

2182

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9 and 10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-6, 9 and 10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 11 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SF-08)
Paper No(s)/Mail Date 06/12/08
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 4 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 4 recites "The circuit of claim 2, in which the controller is further operable to decrement the read address when the amount of data is determined to be less than the nominal level", and is enabled by the read pointer control circuitry of FIG. 7 (see also [0068]-[0069] of the specification). Claim 2 is dependent on claim 1 which recites "the controller configured to controllably activate and deactivate operation of the read pointer by electrically coupling and decoupling, respectively, a clock input of the read pointer for obtaining the read clock". The limitation of claim 2 is enabled by the read pointer control circuitry of FIG. 8 (see also [0070] of the specification), and is therefore not enabled by the circuitry of FIG. 7.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Wang (US 5,563,891).

5. As per claim 1, Wang teaches a buffer circuit [FIG. 3] comprising:

a plurality of memory locations to hold data [620, FIG. 3; col. 8, line 42];

the memory locations of the plurality of memory locations addressable across an address space (addressable space is depth of the buffer);

a read pointer [625, FIG. 3] to point a read address of the plurality of memory locations from which to read output data;

a write pointer [615, FIG. 3] to point a write address of the plurality of memory locations in which to write input data;

the read and write pointers operable responsive to respective read and write clocks [WRITE CLOCK, GAPPED READ CLOCK - FIG. 3] to sequence the read and write addresses across the address space of the plurality of memory locations;

a control register to store a nominal level as a set fill level of the buffer circuit (justification decision circuit [635, FIG. 3] compares the phase difference signal outputted by comparison circuit [630, FIG. 3] to a threshold as shown in FIG. 4B [col. 3, lines 40-43], the threshold indicating a set fill level of the buffer circuit and has to be stored for the justification circuit to compare it with the phase difference signal outputted by comparison circuit); and

a controller to affect operation of the read pointer dependent on the write address

of the write pointer, the read address of the read pointer, and the nominal level [630, 635, 645 - FIG. 3],

the controller configured to controllably activate and deactivate operation of the read pointer by electrically coupling and decoupling, respectively, a clock input of the read pointer for obtaining the read clock (read clock from oscillator [640, FIG. 3] is electrically coupled to the clock input of the read pointer when the inputs to AND gate [645, FIG. 3] are all high, and is electrically decoupled otherwise - hence the operation of the read pointer being activated and deactivated accordingly).

Note that [0066] of applicant's specification also discloses an AND gate at the clock input of the read pointer for electrically coupling and decoupling a read clock to the clock input of the read pointer – hence the operation of the read pointer being activated and deactivated accordingly in a manner that is similar to Wang's.

6. As per claim 2, Wang teaches the controller being operable to determine an amount of data in the buffer circuit based on the difference between the write address and the read address [630, FIG. 6] and to enable the read pointer to increase the read address based on a difference between the amount of data determined and the nominal level [635, 645, 625 - FIG. 6].

7. As per claim 3, Wang teaches the controller being operable to hold the read address of the read pointer when the amount of data is determined to be less than the nominal level (with underflow condition, the read clock is decoupled from the clock input of the read pointer, hence holding the read address of the read pointer). Note that the amount of data being less than a nominal level indicates the same fill level as the

amount of unused memory locations being greater than an empty threshold for a buffer of a fixed depth (for example, a buffer depth of 10 with an empty threshold of 3 would indicate an underflow condition when the amount of data is less than 3, or when the amount of empty locations is greater than 7).

8. As per claim 5, Wang teaches advancing the read address of the read pointer when the amount of data is determined to be greater than the nominal level (without underflow condition, the read clock is coupled from the clock input of the read pointer, hence advancing the read address of the read pointer (col. 2, lines 53-57) – see also rejection of claim 3 above).

9. As per claim 6, see rejection of claims 1, 3 above.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Wood (US 6,721,825).

13. As per claim 4, Wood teaches decrementing the read address to repeat reading the same data in order to avoid underflow condition (col. 3, lines 3-9). Since Wang teaches avoiding underflow condition, and since an amount of data being less than a nominal level indicates an underflow condition, it would have been obvious to one of ordinary skill in the art to decrement the read address in order to repeat reading the same data and avoid underflow condition.

14. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang.

15. As per claim 9, it was known in the art to initialize a buffer by configuring the write pointer and the read pointer to the start address of the buffer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the write pointer and the read pointer to the start address of the buffer when the nominal level is zero - in order to initialize the buffer.

Alternatively, Wang teaches the write pointer and the read pointer being offset by the phase difference between the write pointer and the read pointer [col. 8, lines 50-57; col. 8, line 66-col. 9, line 4; col. 10, lines 15-19].

16. As per claim 10, Wang teaches the address of the read pointer being an address offset from the write pointer, and the offset is equal to the nominal level (see

rejection of claim 9 above).

Response to Arguments

17. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **TANH Q. NGUYEN** whose telephone number is (571)272-4154. The examiner can normally be reached on M-F (9:30AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARIQ HAFIZ can be reached on (571)272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANH Q. NGUYEN/
Primary Examiner, Art Unit 2182

TQN: August 30, 2008